

WHAT IS CLAIMED IS:

1 1. A switch capable of handling voice-over-IP (VoIP) traffic
2 between calling devices and called devices, said switch comprising:
3 a plurality of call application nodes capable of
4 executing call process server applications, wherein a first call
5 process server application is executed on a first one of said
6 plurality of call application nodes and is associated with a
7 similar second call process server application executed on a second
8 one of said plurality of call application nodes separate from said
9 first call application node, said first and second call process
10 server applications thereby forming a first load sharing group
11 server application; and

12 a plurality of network address translation nodes capable
13 of executing firewall server applications, wherein a first firewall
14 server application is executed on a first one of said plurality of
15 network address translation nodes and is associated with a similar
16 second firewall server application executed on a second one of said
17 plurality of network address translation nodes separate from said
18 first network address translation node, said first and second
19 firewall server applications thereby forming a second load sharing
20 group server application, wherein VoIP traffic associated with VoIP
21 calls is received by said second load sharing group server

22 application and said second load sharing group server application
23 selects one of said first and second firewall server applications
24 to verify that said VoIP traffic is authorized to access at least
25 one of said call process server applications in said call
26 application nodes according to a load distribution algorithm.

1 2. The switch as set forth in Claim 1 wherein said load
2 distribution algorithm distributes said VoIP traffic in an
3 alternating manner between said first and second firewall server
4 applications.

1 3. The switch as set forth in Claim 1 wherein said load
2 distribution algorithm distributes said VoIP traffic according to a
3 current traffic load of said first firewall server application and
4 a current traffic load of said second firewall server application.

1 4. The switch as set forth in Claim 3 wherein said load
2 distribution algorithm distributes said VoIP traffic in order to
3 maintain said current traffic load of said first firewall server
4 application at a level substantially equal to said current traffic
5 load of said second firewall server application.

1 5. The switch as set forth in Claim 1 wherein said first
2 firewall server application comprises a first primary-backup group
3 server application, wherein said first primary-backup group server
4 application comprises a first primary firewall process executed on
5 said first network address translation node and a first backup
6 firewall process associated with said first primary firewall
7 process.

A DOCUMENT NUMBER IS LOCATED ON THE LEFT MARGIN OF THE PAGE, CONSISTING OF SEVEN LINES OF FRACTIONAL NUMBERS: 1/1, 2/2, 3/3, 4/4, 5/5, 6/6, 7/7.

6. The switch as set forth in Claim 5 wherein state information associated with said first primary firewall process is mirrored to said first backup firewall process associated with said first primary firewall process.

7. The switch as set forth in Claim 6 wherein said first backup firewall process resides on said first network address translation node.

1 8. The switch as set forth in Claim 6 wherein said first
2 backup firewall process resides on a network address translation
3 node separate from said first network address translation node.

1 9. The switch as set forth in Claim 1 wherein said second
2 firewall server application comprises a second primary-backup group
3 server application, wherein said second primary-backup group server
4 application comprises a second primary firewall process executed on
5 said second network address translation node and a second backup
6 firewall process associated with said second primary firewall
7 process.

10. The switch as set forth in Claim 9 wherein state information associated with said second primary firewall process is mirrored to said second backup firewall process associated with said second primary firewall process.

11. The switch as set forth in Claim 10 wherein said second
1 backup firewall process resides on said second network address
2 translation node.
3

1 12. The switch as set forth in Claim 10 wherein said second
2 backup firewall process resides on a call application node separate
3 from said second network address translation node.

1 13. A telecommunications network comprising:

2 a plurality of switches capable of handling voice-over-IP
3 (VoIP) traffic between calling devices and called devices, each of
4 said plurality of switches comprising:

5 a plurality of call application nodes capable of
6 executing call process server applications, wherein a first
7 call process server application is executed on a first one of
8 said plurality of call application nodes and is associated
9 with a similar second call process server application executed
10 on a second one of said plurality of call application nodes
11 separate from said first call application node, said first and
12 second call process server applications thereby forming a
13 first load sharing group server application; and

14 a plurality of network address translation nodes
15 capable of executing firewall server applications, wherein a
16 first firewall server application is executed on a first one
17 of said plurality of network address translation nodes and is
18 associated with a similar second firewall server application
19 executed on a second one of said plurality of network address
20 translation nodes separate from said first network address
21 translation node, said first and second firewall server
22 applications thereby forming a second load sharing group

23 server application, wherein VoIP traffic associated with VoIP
24 calls is received by said second load sharing group server
25 application and said second load sharing group server
26 application selects one of said first and second firewall
27 server applications to verify that said VoIP traffic is
28 authorized to access at least one of said call process server
29 applications in said call application nodes according to a
30 load distribution algorithm; and

31 an Internet protocol (IP) packet network for
32 interconnecting said plurality of switches; and
33 at least one media gateway coupled to said IP packet
34 network.

14. The telecommunications network as set forth in Claim 13
2 wherein said load distribution algorithm distributes said VoIP
3 traffic in an alternating manner between said first and second
4 firewall server applications.

1 15. The telecommunications network as set forth in Claim 13
2 wherein said load distribution algorithm distributes said VoIP
3 traffic according to a current traffic load of said first firewall
4 server application and a current traffic load of said second
5 firewall server application.

1 16. The telecommunications network as set forth in Claim 15
2 wherein said load distribution algorithm distributes said VoIP
3 traffic in order to maintain said current traffic load of said
4 first firewall server application at a level substantially equal to
5 said current traffic load of said second firewall server
6 application.

1 17. The telecommunications network as set forth in Claim 13
2 wherein said first firewall server application comprises a first
3 primary-backup group server application, wherein said first
4 primary-backup group server application comprises a first primary
5 firewall process executed on said first network address translation
6 node and a first backup firewall process associated with said first
7 primary firewall process.

1 18. The telecommunications network as set forth in Claim 17
2 wherein state information associated with said first primary
3 firewall process is mirrored to said first backup firewall process
4 associated with said first primary firewall process.

1 19. The telecommunications network as set forth in Claim 18
2 wherein said first backup firewall process resides on said first
3 network address translation node.

1 20. The telecommunications network as set forth in Claim 18
2 wherein said first backup firewall process resides on a network
3 address translation node separate from said first network address
4 translation node.

1 21. The telecommunications network as set forth in Claim 13
2 wherein said second firewall server application comprises a second
3 primary-backup group server application, wherein said second
4 primary-backup group server application comprises a second primary
5 firewall process executed on said second network address
6 translation node and a second backup firewall process associated
7 with said second primary firewall process.

1 22. The telecommunications network as set forth in Claim 21
2 wherein state information associated with said second primary
3 firewall process is mirrored to said second backup firewall process
4 associated with said second primary firewall process.

1 23. The telecommunications network as set forth in Claim 22
2 wherein said second backup firewall process resides on said second
3 network address translation node.

24. The telecommunications network as set forth in Claim 22
wherein said second backup firewall process resides on a call
application node separate from said second network address
translation node.